

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today
(1) was not written for publication in a law journal and
(2) is not binding precedent of the Board.

Paper No. 23

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROBERT E. MULLEN, JR.

Appeal No. 1997-2987
Application No. 08/190,389

ON BRIEF

Before HAIRSTON, KRASS and BARRY, **Administrative Patent Judges.**

KRASS, **Administrative Patent Judge.**

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1 through 30, all of the claims pending in the application.

The invention is directed to a protocol converter for interfacing various on-line process equipment with a host computer in a semiconductor manufacturing environment. Independent claim 1, which is representative of the claimed subject matter, is reproduced as follows:

1. A data communications protocol converter for interfacing manufacturing process equipment with a host computer controlling said process equipment, comprising:

a controller responsive to first messages received from said host computer using a first data communications protocol for forming second messages sent to said process equipment using a second data communications protocol, and

a data acquisition system providing a parallel digital input/output interface to said process equipment and responsive to a control signal from said controller for checking and activating operation signals supplied to and from said process equipment to check and set process parameters of said process equipment,

wherein said first data communications protocol differs from said second data communications protocol.

The examiner relies on the following references:

Cox et al. (Cox)	4,387,427	Jun. 07, 1983
Cornwell	4,901,218	Feb. 13, 1990

Walsh, J. et al. (Walsh) "An Automated System for Loading Atmoscan Process Tubes using Intrabay Material Handling Technologies", IEEE/SEMI Advanced Semiconductor Manufacturing Conference 1992, Abstract.

Claims 1 through 30 stand rejected under 35 U.S.C. § 103. As evidence of obviousness, the examiner cites Cornwell with regard to claims 1 through 11, 15 through 20, 22 through 24, 26, 27 and 29, adding Cox with regard to claims 12 through 14 and 25, and citing Cornwell in view of Walsh with regard to claims 21, 28 and 30.

Reference is made to the briefs and answer for the respective positions of appellant and the examiner.

OPINION

With regard to independent claims 1, 22 and 27, all of which stand rejected under 35 U.S.C. § 103 over Cornwell, each of these claims requires the provision of a parallel digital input/output (I/O) interface to process or manufacturing equipment. The examiner relies on probe 48 of Cornwell, which is not directly interfaced with controller 46 as was conventional [see column 5, lines 15-35] but, instead, the probe is interfaced to an I/O port 52 of transputer 28 in the communications adaptor 26. The communications adaptor corresponds to the instant claimed controller and the probe 48 corresponds to the instant claimed “data acquisition system” in claim 1. The examiner recognizes that Cornwell does not provide a parallel digital I/O interface to the process equipment as is claimed but contends that it would have been obvious to modify Cornwell “to maintain a directly interfaced probe and controller because this would allow for direct control of the probe thus eliminating hardware usage and time delays” [answer-page 4].

While we would agree that the artisan would have found it obvious to maintain a directly interfaced probe and controller in Cornwell since Cornwell discloses that that was conventional, we do not understand how such a modification would result in the claimed “parallel digital

input/output interface” to the process or manufacturing equipment. In Cornwell, the disclosed machine tool 20 would appear to correspond to the claimed process or manufacturing equipment. Thus, it is not clear how the examiner’s proposed modification would result in a parallel digital input/output interface to the machine tool 20.

The examiner explains further, at page 9 of the answer, that the direct interface of the probe to the controller would result in both a direct connection to the process equipment and a parallel input through the communications adaptor 26. Thus, the examiner seems to be implying that the proposed modification would result in a direct interface between the probe 48 and the controller 46/machine tool 20 and, at the same time, a parallel digital interface of the probe 48 through interface 50 to communications adaptor 26. We fail to find a suggestion in Cornwell that the connection of the probe 48 to the communications adaptor 26 via interface 50 is a “parallel digital input/output interface,” as claimed. Figure 2, along with the attendant description in the specification, in Cornwell appears to indicate that the connection 53 from I/O port 52 of communications adaptor 26 to probe 48 is a “serial” connection, the only parallel ports shown being 54 and 56.

Accordingly, we do not find that the examiner has established a prima facie case of obviousness with regard to the subject matter of claims 1, 22 and 27. Therefore, we also find that dependent claims 2 through 21, 23 through 26, 29 and 30 will stand with their independent claims.¹

¹Cox was applied with regard to dependent claims 12 through 14 and 25 with regard to teaching a “queue” but Cox does not remedy the deficiency noted with regard to Cornwell and so the application of Cox to these

Accordingly, we will not sustain the rejection of claims 1 through 27, 29 and 30 under 35 U.S.C. § 103.

We will, however, sustain the rejection of claim 28 under 35 U.S.C. § 103.

The difference between Cornwell and the subject matter of claim 28, undisputed by appellant, is that the latter requires a SECS protocol converter wherein data transmitted in a first SECS protocol is converted into data corresponding to a second SECS protocol.

The examiner relies on Walsh to show that SECS interfaces were well known and concludes that it would have been obvious to employ Walsh's SECS interface in Cornwell "because this would allow for optimal interfacing" [answer-page 8].

It is true that we have no evidence, in Cornwell, of a SECS protocol converter as explicitly set forth in claim 28. It is also true that SECS interfaces were well known in the art [page 8 of the instant specification and Walsh]. Appellant argues [principal brief-page 15] that none of the references disclose a protocol conversion between units with different SECS protocols, as recited in claim 28. On balance, we find for the examiner since Cornwell does disclose a protocol conversion (using MAP/ MMS protocols) and it would have appeared obvious to the artisan to employ other, known protocol interfaces, such as SECS, depending on the circumstances requiring such protocol. While appellant argues that the references do not teach protocol conversion

dependent claims cannot save the rejection. Similarly, Walsh, added to Cornwell with regard to dependent claims 21 and 30 does not remedy the deficiency of Cornwell.

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with different SECS protocols, there is no showing that such SECS protocol conversion would require more than a mere substitution of a SECS interface for the interface of Cornwell. There may be good reasons why the artisan reading Cornwell and armed with the knowledge of SECS interfaces would not or could not have been led to employ a SECS interface in the Cornwell system but appellant has presented no such reasons for our consideration. In light of what we perceive to be a prima facie showing by the examiner of the obviousness of employing a SECS protocol conversion in the Cornwell system, the mere argument by appellant that the references do not teach protocol conversion with different SECS protocols is not persuasive.

Accordingly, we will sustain the rejection of claim 28 under 35 U.S.C. § 103.

CONCLUSION

We have sustained the rejection of claim 28 under 35 U.S.C. § 103 but we have not sustained the rejection of claims 1 through 27, 29 and 30 under 35 U.S.C. § 103.

Accordingly, the examiner's decision is affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

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KENNETH W. HAIRSTON
Administrative Patent Judge

ERROL A. KRASS
Administrative Patent Judge

LANCE LEONARD BARRY
Administrative Patent Judge

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